

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for preparing ~~[[an]]~~ at least one alkene oxide, ~~which comprises at least the steps (i), (ii) and (v):~~ comprising

- (i) providing a stream S1 comprising at least one compressed ~~[[,]]~~ liquid alkene;
- (ii) depressurizing at least part of the stream S1 with absorption of heat and with at least partial vaporization of the at least one compressed liquid alkene to form an at least partially vaporized alkene; and
- (v) reacting the at least partially vaporized alkene ~~obtained in from~~ (ii) with a at least one hydroperoxide in the presence of at least one solvent and at least one catalyst to give a mixture comprising the at least one alkene oxide and the at least one solvent.

Claim 2 (Currently Amended): ~~A process as claimed in~~ The process of claim 1, wherein the at least partially vaporized alkene and the at least one compressed liquid alkene ~~are~~ is propene, the at least one hydroperoxide is hydrogen peroxide, the at least one catalyst used is a titanium silicalite catalyst and the at least one solvent is methanol.

Claim 3 (Currently Amended): ~~A process~~ The process of ~~as claimed in~~ claim 2, wherein the stream S1 in (i) comprises liquid propene at a pressure in the range of from 20 to 35 bar and a temperature in the range of from 5 to 30°C.

Claim 4 (Currently Amended): ~~A process as claimed in~~ The process of claim 2 ~~[[or 3]]~~, wherein ~~at least part of stream S1 is/are~~ the depressurizing at least part of the stream S1

in (ii) comprises depressurizing ~~depressurized~~ to a pressure ~~in the range~~ ranging from 4 to 10 bar.

Claim 5 (Currently Amended): ~~A process~~ The process of ~~as claimed in any of claims 1 to 4~~ claim 1 further comprising at least one heat exchanger, wherein ~~the refrigeration effect produced by the depressurization in (ii)~~ produces a refrigeration effect which is transferred ~~[[in]] by the~~ at least one heat exchanger to at least one ~~suboperation of (i), (ii) or (v) of the~~ alkene oxide production process.

Claim 6 (Currently Amended): ~~A process as claimed in~~ The process of claim 5, wherein the mixture in (v) further comprises unreacted alkene;  
wherein the unreacted alkene is separated from the mixture to give a mixture (M1) comprising the at least one alkene oxide and the at least one solvent;  
wherein the at least one alkene oxide is separated from the mixture (M1) by distillation, and  
wherein, in the distillation, the alkene oxidized is condensed by the transfer of the refrigeration effect to condense the distilled alkene oxide ~~wherein the suboperation of the alkene oxide production process is the condensation of a vapor which consists essentially of alkene oxide and is obtained in the separation of alkene oxide from a mixture (M1) comprising alkene oxide and at least one solvent by distillation.~~

Claim 7 (Canceled).

Claim 8 (Currently Amended): ~~A process as claimed in any of claims 1 to 7~~ The process of claim 1, wherein the at least partially vaporized alkene in (ii) comprises a gaseous alkene, and wherein the process further comprises ~~which further comprises the steps (iii) and (iv):~~

- (iii) dissolving the gaseous alkene obtained in (ii) in at least one ~~of the solvents used in (v) or (v')~~ solvent to give a solution; and
- (iv) introducing the solution obtained ~~[[in]]~~ from (iii) into (v) ~~into the apparatus used for the reaction of (v) or (v').~~

Claim 9 (Currently Amended): ~~A process as claimed in claim 8~~ The process of claim 8, wherein heat is evolved in (iii) and wherein the evolved heat is ~~, wherein the heat of solution evolved in (iii) is removed by~~ transfer to ~~means of~~ river water.

Claim 10 (Currently Amended): ~~A process as claimed in claims 8 or 9~~ The process of claim 8, wherein the at least one solvent used in (iii) is circulated.

Claims 11 (Currently Amended). The process of claim 1, A process for preparing an alkene oxide, which comprises at least the steps (i), (ii) and (v):

- ~~(i) — providing a stream S1 comprising compressed liquid alkene;~~
- ~~(ii) — depressurizing at least part of the stream S1 with absorption of heat and with at least partial vaporization of the liquid alkene;~~
- ~~(v) — reacting the alkene obtained in (ii) with a hydroperoxide in the presence of at least one solvent and at least one catalyst to give a mixture comprising alkene oxide and the at least one solvent;~~

wherein the at least partially vaporized alkene and the at least one compressed liquid alkene are is propene, the at least one hydroperoxide is hydrogen peroxide, the at least one catalyst used is a titanium silicalite catalyst and the at least one solvent is methanol.

Claim 12 (Currently Amended): ~~A process as claimed in claim 11, wherein the refrigeration effect produced by the depressurization in (ii) is transferred in at least one heat exchanger to at least one suboperation of the alkene oxide production process~~ The process of claim 11 further comprising at least one heat exchanger, wherein the depressurization in (ii) produces a refrigeration effect which is transferred by the at least one heat exchanger to at least one of (i), (ii) or (v) of the alkene oxide production process.

Claim 13 (Currently Amended): Claim 6 (Currently Amended): ~~A process as claimed in~~ The process of claim 12,

wherein the mixture in (v) further comprises unreacted alkene,  
wherein the unreacted alkene is separated from the mixture to give a mixture (M2) comprising the at least one alkene oxide and the at least one solvent;  
wherein the at least one alkene oxide is separated from the mixture (M2) by distillation, and  
wherein, in the distillation, the alkene oxidized is condensed by the transfer of the refrigeration effect to condense the distilled alkene oxide

~~A process as claimed in claim 12, wherein the suboperation of the alkene oxide production process is the condensation of a vapor which consists essentially of alkene oxide and is obtained in the separation of alkene oxide from a mixture (M1) comprising alkene oxide and at least one solvent by distillation.~~

Application No. 10/553,516  
Preliminary Amendment

• Claims 14-16 (Canceled).